

WHAT IS CLAIMED IS:

- 1 1. A vehicle tire pressure monitoring (TPM) system, the system
2 comprising:
3 an immobilizer transmitter that transmits at least one low frequency
4 (LF) sensor diagnostic signal;
5 at least one TPM sensor, wherein the at least one TPM sensor
6 comprises a transceiver that receives the at least one LF sensor diagnostic signal
7 and, when the at least one TPM sensor is operating properly, presents at least one
8 radio frequency (RF) message signal; and
9 a TPM receiver that receives the at least one RF message signal and
10 provides an indication to an operator when the at least one RF message signal is
11 received, wherein the LF sensor diagnostic signal is transmitted to determine proper
12 operation of the at least one TPM sensor.
- 1 2. The system of claim 1 wherein the TPM receiver provides an
2 alert to the operator when the at least one RF message signal is not received in
3 response to the LF sensor diagnostic signal.
- 1 3. The system of claim 1 wherein the operator initiates
2 transmission of the LF sensor diagnostic signal independently of vehicle
3 immobilization operation.
- 1 4. The system of claim 3 wherein the immobilizer transmitter
2 transmits at least one second LF signal that is related to at least one vehicle theft
3 deterrent operation.
- 1 5. The system of claim 1 wherein the TPM receiver is a
2 combination remote keyless entry (RKE) and TPM receiver and provides at least one
3 RKE operation.
- 1 6. The system of claim 1 wherein the LF sensor diagnostic signal
2 is transmitted in connection with at least one of a TPM sensor test, a TPM sensor

3 diagnosis, a TPM system diagnosis, a TPM sensor association to the TPM system,
4 and a TPM sensor location association on a vehicle.

1 7. The system of claim 1 wherein the TPM sensor further
2 comprises an antenna that is configured to receive the at least one LF sensor
3 diagnostic signal and present the at least one RF message signal.

1 8. The system of claim 1 wherein the TPM sensor is positioned
2 at a desired location at or near a vehicle.

1 9. For use in a vehicle tire pressure monitoring (TPM) system,
2 a method of determining proper operation of a TPM sensor, the method comprising:
3 transmitting at least one low frequency (LF) sensor diagnostic signal
4 via an immobilizer transmitter;
5 providing at least one TPM sensor, wherein the at least one TPM
6 sensor comprises a transceiver that receives the at least one LF command signal and
7 presents at least one radio frequency (RF) message signal;
8 presenting the RF message signal when the at least one TPM sensor
9 is operating properly; and
10 providing an indication to an operator when the at least one RF
11 message signal is received by a TPM receiver.

1 10. The method of claim 9 further comprising providing an alert
2 to the operator when the at least one RF message signal is not received by the TPM
3 receiver in response to the LF sensor diagnostic signal.

1 11. The method of claim 9 wherein the operator initiates
2 transmission of the LF sensor diagnostic signal independently of vehicle
3 immobilization operation.

1 12. The method of claim 11 wherein the immobilizer transmitter
2 transmits at least one second LF signal that is related to at least one vehicle theft
3 deterrent operation.

1 13. The method of claim 9 wherein the TPM receiver is a
2 combination remote keyless entry (RKE) and TPM receiver and provides at least one
3 RKE operation.

1 14. The method of claim 9 wherein the LF sensor diagnostic
2 signal is presented in connection with at least one of a TPM sensor test, a TPM
3 sensor diagnosis, a TPM system diagnosis, a TPM sensor association to the TPM
4 system, and a TPM sensor location association on a vehicle.

1 15. The method of claim 9 wherein the TPM sensor further
2 comprises an antenna that is configured to receive the at least one LF sensor
3 diagnostic signal and present the at least one RF message signal.

1 16. The method of claim 9 further comprising positioning a target
2 one of the at least one TPM sensors at a desired location at or near a vehicle.

1 17. A vehicle tire pressure monitoring (TPM) system having self-
2 diagnostics, the system comprising:
3 an immobilizer transmitter that transmits at least one low frequency
4 (LF) sensor diagnostic signal;
5 at least one TPM sensor that comprises a transceiver that receives the
6 at least one LF sensor diagnostic signal, and presents at least one radio frequency
7 (RF) message signal in response to the LF sensor diagnostic signal when operating
8 properly; and
9 a combination remote keyless entry and TPM receiver that receives
10 the at least one RF message signal and provides an indication to an operator when
11 the at least one RF message signal is received and an alert to the operator when the
12 at least one RF message signal is not received.

1 18. The system of claim 17 wherein the LF command signal is
2 transmitted in connection with at least one of a TPM sensor test, a TPM sensor

3 diagnosis, a TPM system diagnosis, a TPM sensor association to the TPM system,
4 and a TPM sensor location association on a vehicle.

1 19. The system of claim 17 wherein the operator initiates
2 transmission of the LF sensor diagnostic signal independently of vehicle
3 immobilization operation.

1 20. The system of claim 19 wherein the immobilizer transmitter
2 transmits at least one second LF signal that is related to at least one vehicle theft
3 deterrent operation.